

## II—SOME OBSERVATIONS ON THE CARABIDÆ INCLUDING A NEW SUBFAMILY.

A few more or less interesting new Carabid species and subspecies have been in my collection for some time, awaiting a convenient opportunity for publication. It would be better to have had them appear in the course of systematic work, but as the groups to which they pertain have in most instances been studied monographically in comparatively recent times, it will be easy to make the necessary interpolations.

### Subfamily CARABINÆ.

#### Tribe CYCHRINI.

The singularly isolated habitus of the species in this section of the Carabidæ, as well as their frequent rich metallic coloring, has caused them to receive a large amount of attention from collectors of the Coleoptera, but taxonomically they are rather difficult to deal with. The following seem to be some rather evident novelties in this tribe:

***Irichroa æneicollis* ssp. *tricarinata* nov.**—Form nearly as in *æneicollis* but rather narrower and more elongate, black, without metallic reflection at any part, except a very feeble greenish glint on the pronotum; head and antennæ nearly similar; prothorax similar in form and size, except that the sides are not sharply angulate but prominently rounded, the surface more rugulose transversely, the longitudinal impressions a little more acutely and deeply impressed and the basal margin relatively narrower; elytra nearly similar but rather more elongate and less convex, the striæ with even coarser and more crowded punctures and with intervals 4-8-12 elevated, becoming feebly cariniform basally; tarsi nearly similar. Length (♂) 18.5 mm.; width 7.7. mm. North Carolina (Blue Ridge Mts.),—Beutenmüller.

The geographical habitat is different from that of *æneicollis*, which has occurred so far only on the Black and Balsam Mts. of North Carolina and Tennessee; it is a distinct species and by no means a subspecies or variety of *andrewsi*.

***Sphæroderus lecontei* ssp. *diffractus* nov.**—Similar in general form and habitus to *lecontei* but more slender and very much smaller, shining,

black, with violet lustre, the elytra obscure cupreous; under surface and legs deep black; head as in *lecontei*, the antennæ relatively distinctly shorter, slender; prothorax as in *lecontei* throughout but with the sides more prominently rounded medially, the base similarly bi-impressed and sparsely punctured between the foveæ; elytra nearly similar but narrower, the stria punctures less distinct and all the intervals irregularly broken up and tuberculiferous apically and in about lateral third, except basally; anterior tarsi (♂) less strongly dilated, the first joint rather longer than wide. Length (♂) 10.0 mm.; width 4.6 mm. New Brunswick.

The head and prothorax are relatively a little smaller than in *lecontei* and the hind tarsi still shorter, the anterior tarsi of the male are much less dilated and the elytral sculpture more confused laterally.

### Brennus Mots.

This group of the Cychrini, whether wholly valid as a genus or not, is at any rate very definitely circumscribed. The conditions prevailing within it are similar to those pertaining to *Omus* and *Euschides*; that is to say, we see a geologically recent type splitting into a most confusing variety of subordinate forms, due principally to geographic isolation in mountainous country, but at the present stage of development exhibiting a process of segregation into a more limited number of tolerably definite primary or stem forms, with many allied subordinates in each case. I have no doubt at all that these satellites of the more definite stem forms should be called subspecies, but to go further and discriminate such categories as varieties, aberrations and monstrosities, is wholly unwarranted at the present stage of knowledge. It is also a very difficult matter to decide, with our present lights, just which should be considered stem forms and thus receive the designation of species, and which should continue as subspecies. That Dr. Roeschke has carried the lumping too far is I think self-evident. For example, under *ventricosus* he places both *striatus* Lec. and *fuchsianus* Riv., in subordinate rank; this is clearly unwarranted, for they both differ profoundly from *ventricosus* Dej., in general habitus and other characters of moment in this genus. The author has also, quite without any sort of warrant, suppressed my *symmetricus* as a monstrosity, but for what reason is unknown; it is altogether isolated in general habitus and gives no indication of being an aberration in the usual meaning of that word; but only the single char-

acteristic of sculpture was considered by him. Again, without any kind of justification, he has relegated to inferior rank *compositus*, *porcatus* and *insularis* Csy., on pure assumption; his views in regard to these four species are certainly erroneous. The finely reflexed, completely non-metallic elytral margins and the general facies of *porcatus* are more nearly as in the *obliquus* series, although the supra-orbital seta shows that it must be associated with *dissolutus*. *Dissolutus*, it seems, was not represented in my collection when I drew up my revision of *Brennus*, but I have since received a specimen taken by Dr. Blaisdell at Mokelumne Hill, Calaveras Co.; it is closely allied to *interruptus*; the elytra are more shining and the elytral margins moderately metallic and more broadly reflexed than in *porcatus*; the female of the latter is also now at hand, from the same source as the male type; I had confused it with the female of *opacicollis*, they are mutually so very similar. The forms allied to *interruptus* and *dissolutus* are in a condition of decided incertitude and confusion. The author has given very little attention to points that must be of considerable taxonomic value, such as the number of elytral striæ, metallic or non-metallic elytral margins and structure of the anterior male tarsi and his separation of the *oreophilus* section because of a feeble incurvature of the thoracic base, is a rather weak feature; this feeble sinuosity exists also in *productus* described below.

In regard to my previous work in this genus, which is so severely condemned by Dr. Roeschke,\* I have only to say that conditions were such at that time that I could not consult all the original literature and had to rely upon the identifications of my predecessors, so far as possible. It is for this reason that I failed to

\* The generally undisguised animus toward me and my work, exhibited by Dr. Hans Roeschke in the course of his Monograph on the Cychrini, is quite unaccountable, for such a personal attitude was entirely unnecessary in a critical review. The intimation made on page 102, with the most amusing naiveté, that my "Arten" have in every instance proven to be spurious or to be masquerading under false pretenses, will be in considerable part controverted under more reasonable and unbiased comparative study from the types. It would have been at least in better taste had the author given the benefit of the doubt to his fellow worker, in those cases where he could not be sure, because of lack of authentic material. As a matter of fact neither Dr. Roeschke nor his active helper in this country, Dr. Van Dyke, has ever written me a line concerning my collection or has ever had so much as a glimpse of any of my types or evinced any desire whatever to see them. His work contains many errors of identification, which I hope it may be my pleasure to demonstrate to him eventually.

identify *ventricosus* (*sinuatus* Csy.), *interruptus* and *dissolutus* properly, but from what I can glean from the Roeschke monograph, my identification of *ventricosus* was the large form called by him *lativentris* Mots.; it was in no sense the *fuchsianus* of Rivers, as stated by the author. My identification of *striatopunctatus* Chd., was the form which the author calls *alternatus* Mots. My determination of *ovalis* Mots. is correct, as it agrees thoroughly with the description and particularly with the careful figure given by Motschulsky. *Gentilis* Csy., is a valid subspecies at least; it has smaller punctures than *crenatus* Mots., and is stouter in form in both sexes. *Opacicollis*, *convergens* and *sculptipennis* are distinct among themselves and are not all varieties of *obliquus*. *Basalis* is a valid species and *duplicatus* is rather more than a subspecies of *cristatus*. One source of trouble is that Dr. Roeschke does not know my work very thoroughly, because of frequent failure to grasp my meaning, probably largely because of unfamiliarity with the English language; the consequence is that he has failed to identify my species correctly. Another origin of discord is the fact that we evidently have radically different ideas as to the meaning of the word species; this is a matter of opinion, the correctness of which need not greatly concern us, as it will be definitely adjudicated under the light of future knowledge; the question now is more essentially one regarding absolute synonymy, but in the Roeschkean sense, a synonym need not necessarily be a synonym.

The following are some additional forms in this genus:

**Brennus rugiceps** ssp. **congener** nov.—Body moderately ventricose and convex, deep black, shining, the pronotum opaculate; head in almost every way as in *incipiens*, the irregular crest having an elongate crater-like posterior excavation, partially closed posteriorly by a short longitudinal ridge; prothorax differing decidedly, smoother and more opaque, slightly elongate, the sides subangularly widest before the middle, thence oblique and straight to the subbasal sinus, thence subparallel and straight for a considerable distance to the basal margin, which is transverse to feebly sinuato-truncate and half the maximum width (♀), much less (♂); elytra less than one-half longer than wide, oval, rather transversely rounded at base, deeply but very irregularly 18-striate, the striae moderately broken but easily traceable throughout at the sides, rather finely and indistinctly punctate, the intervals moderately convex, strongly so laterally; margins finely reflexed, not metallic; anterior tarsi (♂) with the first joint in apical third, the second and third wholly spongy-pubescent beneath, the fourth without trace of squamules. Length (♂ ♀) 12.5–14.5 mm.; width 5.8–6.7 mm. Oregon (Josephine Co.),—Nunenmacher. A single pair.

Differs from *incipiens* in the angulate sides of the prothorax, these being strongly but evenly rounded at the point of greatest width in *incipiens*, and in the latter the sides toward base are still converging, not subparallel as in *congener*; the pronotum is more shining and more coarsely rugulose in *incipiens*. Both of these forms are possibly subspecies of *rugiceps*.

**Brennus productus** n. sp.—Elongate, ventricose, only very moderately convex, black, alutaceous throughout, the elytra rather more shining; head as in *ventricosus* but much narrower, the labral lobes similar but less diverging; supra-orbital puncture feeble but evident; prothorax differing greatly, being small and narrow, more nearly as in *striatus*, fully as long as wide but apparently somewhat elongate, the sides anteriorly inflated and broadly rounded, thence oblique posteriorly, then sinuate, becoming straight and parallel for an unusually long distance before the base, this being fully a fifth the total length; sides strongly reflexed but not so strongly as in *ventricosus*; surface nearly as in the latter; base narrower and broadly sinuate as in *oreophilus*, one-half the maximum width; elytra evenly elliptic, one-half longer than wide, finely but deeply about 17-striate, the striæ very regular and with rather small punctures, becoming coarser laterally, the striæ outside the thirteenth much confused and barely traceable; intervals convex; margins strongly reflexed, not metallic; anterior tarsi (♂) nearly as in the preceding throughout. Length (♂) 15.7 mm.; width 7.0 mm. California (exact locality unrecorded but probably coastal).

The general appearance of this species is unlike any other known to me but seems to approach *striatus* more closely than *ventricosus*; the probabilities are that it will prove to be of specific rather than subspecific value and it is therefore so announced.

**Brennus integer** n. sp.—Body small in size, strongly ventricose, very shining and deep black throughout, the reflexed margins of the elytra violaceous; head moderate, smooth and shining along the middle, with a supra-orbital seta; antennæ slender, about as long as the elytra; prothorax relatively small, rather wider than long, the sides inflated and evenly rounded anteriorly, rapidly very oblique posteriorly, abruptly sinuate near the base, the sides thence parallel and straight to the base, which is transverse and distinctly less than half the maximum width; surface shining, finely subrugulose, feebly impressed along the sides, the transverse impressions and median stria strong, the margin strongly reflexed; elytra oval, obliquely attenuate and sharply pointed posteriorly, very convex, with fourteen deeply impressed striæ, complete and perfectly regular throughout the width, not at all confused laterally, the punctures not large and but slightly crenulating the very convex and perfectly even intervals throughout, the latter very highly polished; male with the anterior tarsi rather feebly dilated; joints two and three and less than apical third of the first densely spongiöse beneath. Length (♂) 12.4 mm.; width 5.8 mm. California (Sta. Cruz).

This species is about the smallest of the *interruptus* series and may be placed near *corpulentus*, which however has about fifteen striae, irregular laterally and without trace of metallic margin.

**Brennus oreophilus** ssp. *humeralis* nov.—Smoother and more ventricose than *oreophilus*, shining, the pronotum similarly smooth and opaculate; head nearly similar; prothorax relatively somewhat smaller and narrower, fully as long as wide and apparently a little longer, the anterior angles more rounded, the sides posteriorly similarly oblique and feebly sinuate; base slightly sinuate and one-half the maximum width; surface and margins nearly as in *oreophilus*; elytra differing decidedly, more inflated, barely a third longer than wide, the sides rapidly rounding inward at base to the thoracic base, the humeri thus more evident than in any other form of the genus, the apex acutely ogival; surface very convex, rather finely striate, the striae finely, not closely punctate, very much finer and more finely punctate than in *oreophilus*, confused in nearly lateral third; male with the anterior tarsi distinctly dilated; joints two and three and apical half of the first densely spongy-pubescent, the fourth without squamules. Length (♂) 15.0 mm.; width 7.0 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

In the male of *oreophilus* the anterior tarsi are rather less dilated but similarly clothed beneath, except that the first joint is densely clothed in rather less than apical half; the elytra are more evenly rounded at the sides basally and the elytral striae, and especially the punctures, are much coarser. From *hopplingi* Roe., in which also the humeri are somewhat more evident than in *oreophilus*, *humeralis* may be known at once by the much shorter, more finely punctate and more shining elytra, more distinct humeri and less sinuate oblique sides of the prothorax.

The Sierra form placed with *lativentris* Mots., by Dr. Roeschke is not exactly the same, the general habitus is very similar but the prothorax is somewhat shorter and broader.

### **Maronetus** n. gen.

In describing *Pseudonomaretus*, Dr. Roeschke failed to indicate any type species and, as he included two distinct genera under that name, I will here designate the large and conspicuous and more completely striate species *relictus* Horn as the type; *regularis* Lec., *merkeli* Horn and *idahoensis* Webb, will also form part of *Pseudonomaretus* and perhaps one or two other similar forms. Under the name *Maronetus*, I have separated the smaller and more slender species, with less complete elytral striation, of which the following may be regarded as the type.

**Maronetus tenuis** n. sp.—Form slender, very convex and shining, somewhat piceous-black, the legs piceous; head scarcely two-thirds as wide as the prothorax, the eyes moderate; labral lobes very slender, the notch almost attaining the base; front smooth; supra-antennal edge strongly elevated; antennæ slender, testaceous, not quite two-thirds as long as the body, the basal joint not quite as long as the next three combined; prothorax narrow, longer than wide, the sides inflated and evenly rounded anteriorly, oblique and straight thence to the base, which is feebly sinuate medially, two-thirds the maximum width and slightly wider than the apex, the latter truncate, with obtuse and broadly rounded angles; surface smooth, the transverse impressions rather sharply marked, the stria connecting them along the middle distinct, the basal foveæ deep, short, impunctate, separated from the margin by a thin cariniform wall; lateral edges without trace of reflexed margin; elytra elongate-oval, three-fourths longer than wide, less than twice as wide as the prothorax, the sutural stria coarse, deep, coarsely punctate, extending from near the base to apical third, the second stria much less coarse and more finely punctate, extending less closely to the base and obsolete behind the middle, the third stria represented only by a very fine feeble impunctate impressed line, very short and only visible by very oblique illumination; all the other striæ completely obsolete, the surface very smooth and polished; the fine marginal stria is visible feebly near the apex; reflexed margin extremely fine; legs slender, the hind tarsi rather short, slender. Length (♀) 6.8 mm.; width 2.1 mm. North Carolina (Black Mts.),—Beutenmüller.

This remarkable species, the smallest of our Cychrini, may be distinguished at once from *imperfectus* Horn, with which it has been confounded, by the complete absence of any trace of a reflexed lateral thoracic margin, by having only two elytral striæ and by its smaller size and more slender form. In *imperfectus* the prothorax is much less narrow than in *tenuis* and there is a distinct and entire though rather feebly developed reflexed thoracic margin. The setigerous puncture at two-fifths from the apex—the point of maximum width—is as well developed as usual; the subbasal puncture and seta are rather small but distinct. This genus, besides *tenuis* and *imperfectus*, will comprise a number of other species such as *hubbardi* and *incompletus* Schwarz and *schwarzi* Beutenmüller.

Tribe CARABINI.

**Calosoma** Weber.

I have recently received from Mr. Knaus three specimens in this genus that are of peculiar interest. One of them is the true *prominens*, of LeConte, taken at Phoenix, Ariz., and hitherto not



represented in my collection; it is obviously widely different from *peregrinator*. Another is an example of *carbonata* Lec., from Oak Creek, Ariz., its most western limit of range known to me. *Ingens* Csy., is, I think, a distinct species and not a subspecies; it has a much shorter and relatively broader hind body than in *peregrinator* or *carbonata* and is of very much larger size than *amplipennis*. All of these species and subspecies, together with *apacheana* Csy., form a group distinguished by the rather large head, long antennæ, more or less feebly angulated sides of the prothorax and feeble elytral sculpture. The third specimen represents an undescribed species, which may be known as follows:

**Calosoma clemens** n. sp.—Size very much smaller and more slender, deep black, rather shining; head and prothorax relatively much smaller than in the *peregrinator* group, the former with very prominent eyes; vertex sparsely but rather coarsely punctate; mandibles with the incurved apex very acute, strongly, transversely rugose throughout above; antennæ slender, shorter than in *peregrinator*, extending to  $\frac{1}{4}$  basal fifth or sixth of the elytra, the third joint as long as the next two; prothorax three-fourths wider than long, conspicuously small in size, the sides obtusely angulate at the middle, strongly rounded anteriorly, oblique and nearly straight posteriorly; base feebly sinuate at each side, the posteriorly produced angles small and acute, somewhat everted at tip; surface feebly convex, very finely punctulate and confusedly creased, moderately and rather sparsely punctured along the sides and apex and more coarsely punctured and rugose along the base; latero-basal impressions rather narrow and deep; sides somewhat broadly and feebly concavo-deplanate, the edge very moderately reflexed; elytra nearly three-fourths longer than wide, almost twice as wide as the prothorax, very slightly wider at apical fourth than at base, the sides very feebly arcuate, the apex obtusely ogival; surface with fine striæ of minute punctures, connected by transverse and rather deep coarse lines basally and laterally, the foveæ very minute; lateral margins somewhat broadly reflexed and just visibly metallic steel-blue; legs slender, rather short, the hind tarsi three-fourths as long as the tibiae; anterior tarsi ( $\sigma^7$ ) as in *peregrinator* but rather less dilated. Length ( $\sigma^7$ ) 20.0 mm.; width 8.2 mm. Nevada (Las Vegas),—Spalding.

This species belongs to the *prominens*, *parvicollis*, *subgracilis* section of the genus, which is well distinguished from the *peregrinator* section by the smaller head; the sides of the elytra basally are feebly serrulate in both these sections, but in *lugubris*, with which *peregrinator* is compared by Bates, these serrulations are obsolete; the *prominens* referred to by Bates at the same place in the "Biologia," is undoubtedly *parvicollis* Fall and not the true



*prominens* Lec. *Subgracilis* was when described represented by the male alone, the female also is now at hand; it agrees thoroughly with the male in general form and habitus but is much larger; it is a narrower, more elongate and polished species than *peregrinator* and has a distinctly smaller head, showing that it belongs with the *prominens* series.

***Calosoma semilævis* ssp. *davidsoni* nov.**—General habitus, lustre and sculpture as in *semilævis* but more elongate, with the prothorax much smaller, less transverse and having the parallel sides much less rounded; elytra a little smoother and more shining. Length (♂ ♀) 21.0–24.0 mm.; width 9.4–10.5 mm. California (Alameda Co.).

This is the variety alluded to in my previous article on *Calosoma* (Mem. Col. IV, p. 65); its appearance is very distinct from that of *semilævis* and it should be designated by name; it is named in honor of Dr. George Davidson. *Semilævis* is common near San Francisco; there is one example in my series which does not seem to differ, marked Guadalupe Island.

#### Subfamily PTEROSTICHINÆ.

##### ***Adrimus* Bates.**

The following species seems certainly to belong to this genus, which is disseminated in very moderate number from the Amazon regions to Mexico:

\****Adrimus panamensis* n. sp.**—Moderately stout and convex, strongly shining throughout, the elytra with evident iridescent lustre, piceous-black in color, rather paler beneath, the legs throughout and the palpi pale flavo-testaceous; head smooth, nearly three-fourths as wide as the prothorax, with large and prominent eyes, the foveæ impressed and oblique, the palpi very slender; antennæ slender and filiform, rather more than half as long as the body, feebly infusate, clearer testaceous basally; prothorax about a third wider than long, widest before the middle, the sides broadly, evenly rounded, slightly converging basally, becoming feebly sinuate at the hind angles, which are finely acute and prominent; base transverse, beaded only laterally, a little wider than the apex, which is moderately sinuate, with rather distinct angles; surface smooth, finely reflexed at the sides, without trace of transverse impressions and extremely minutely, sparsely and feebly punctulate throughout at base, the stria very fine, not entire, the foveæ elongate, narrow, linear and moderately impressed; elytra barely two-fifths longer than wide and about one-half wider than the prothorax, parallel, with rather arcuate sides and rapidly ogival apex, the sinus feeble, the fold evident; striæ fine but rather deeply impressed, finely, closely and very evenly punctate,

the punctures gradually obsolescent apically, the scutellar stria completely wanting, the fovea distinct; intervals moderately convex, the third with a substrial puncture just behind basal third; lateral line of foveæ not interrupted; hind tarsi slender, filiform, the basal joint about as long as the next two and a little longer than the fifth; anterior tarsi (♂) moderately dilated, biseriately and closely squamulose beneath, the middle tarsi very slender and unmodified. Length (♂) 6.0 mm.; width 2.15 mm. Isthmus of Panama (Colon),—Beaumont.

To be readily known from *olivaceus* Bates, from Guatemala, by its smaller size and, though nearly similar in outline to that species as figured, it seems to differ so radically in its obsolete anterior thoracic impression, feebler foveæ, very much finer basal punctures and not at all explanate basal angles, that a different though closely related genus may be indicated. The sides of the prothorax have a seta behind apical third and another smaller at the hind angles.

#### Subfamily CHLÆNIINÆ.

##### *Chlænius* Bon.

The following forms, some specific and some which may be regarded at present as of subordinate value, may be conveniently defined at the present opportunity:

*Chlænius regularis* ssp. *apacheanus* nov.—Form and facies somewhat as in *regularis* Lec., feebly shining, the elytra opaculate; upper surface deep indigo-blue throughout, the under surface black, the legs rufous; head as in *regularis*, the antennæ similar but rather shorter; prothorax shorter, transverse, fully two-fifths wider than long, otherwise as in *regularis* throughout; elytra in form, sculpture and relationship with the prothorax nearly similar but more abbreviated; under surface nearly similarly but rather less densely punctured and pubescent; male with the anterior tarsi distinctly shorter, the punctures on the upper surface of the three dilated joints coarser, the second joint distinctly wider than long, the third but very little longer than wide. Length (♂ ♀) 13.0–13.5 mm.; width 5.5–6.0 mm. Arizona (southwestern) and the adjacent parts of California. Five examples.

Closely allied to *regularis* Lec., which is not a variety of *sericeus*, but differing in its smaller size, shorter prothorax and shorter and more punctate anterior male tarsi; in *regularis*, the dilated joints of the anterior male tarsi are feebly punctate on their upper surface, the second is quadrate and the third much longer than wide. It differs from *viridifrons* in its stouter form and entirely violet-blue upper surface.

Comparing a male of *sericeus* from New York with a male of *perviridis* Lec., from Siskiyou Co., California, a number of rather radical differences become apparent; the size, for example, of *perviridis* is smaller and the form more slender; the maxillary palpi, legs and tarsi are relatively shorter; if not specifically different, which I hold to be the case, *perviridis* is therefore, at any rate, a well defined subspecies of *sericeus*. The following is apparently another:

**Chlænienus sericeus** ssp. *uteanus* nov.—Form narrower and more elongate than in *sericeus*, the elytra smoother; upper surface green, changing to violet by very oblique illumination, shining anteriorly, the elytra opaculate; head, antennæ and palpi as in *perviridis*, the antennæ, as well as the palpi, shorter than in *sericeus*; prothorax differing from either, being narrower and more elongate, nearly as long as wide, otherwise similar, except that the punctures are not quite so coarse or close-set; elytra differing from both in being more oblong and rectilinearly parallel and in having the striæ still finer and not in the least impressed even basally, the punctures basally not more evident as they are in both *sericeus* and *perviridis*; angle made by the basal and marginal beads more acute than in either; under surface less closely or coarsely punctured than in *perviridis*; anterior tarsi (♂) with the first three joints diminishing less rapidly in width than in *perviridis*. Length (♂) 14.0 mm.; width 6.0 mm. Utah (Provo),—Wickham.

The type of this subspecies undoubtedly presents a different appearance from the male of either *sericeus* or *perviridis*, but at the same time, I have two examples that were also taken at Provo by Wickham, that have a shorter prothorax and brighter green color, though similar otherwise, and I regard them as identical with *uteanus*; they differ in facies from *perviridis*, because of the more oblong and less oval elytra. My series of the true *sericeus* extends in locality from Rhode Island to Lake Superior and Arizona and displays no very noticeable variability.

The large series at hand show quite conclusively that *leucoscelis* Chev., and *cordicollis* Kirby are distinct species; the former is somewhat smaller in size and very much more slender in build, of a deeper indigo-blue color and differs in numerous other minor characters. The following are well defined species allied to *leucoscelis* and *cordicollis* respectively:

**Chlænienus gilensis** n. sp.—Body much smaller than in *leucoscelis*, the elytra more parallel and more abbreviated; head nearly similar, the eyes still larger and more prominent; antennæ and palpi longer and more

slender; prothorax similar and dark steel-blue but with more numerous punctures anteriorly, basally and toward the median stria; elytra differing greatly in form; being parallel, with just visibly arcuate sides and only about one-half longer than wide, deep steel-blue, striate and punctured as in *leucoscelis* but with the interstitial punctures finer; broadly rounded reflexed edge at the humeri, the under surface and legs nearly similar. Length ( $\sigma^7$  ♀) 12.0 mm.; width 4.9–5.0 mm. Arizona (Yuma). A single pair taken by the writer.

In *leucoscelis* the elytra are much longer and are gradually slightly inflated posteriorly, being widest behind the middle and with notably arcuate sides; in fact the habitus of the two species is very different. From a personal study of the type in the LeConte collection, the form described as *monachus* by LeConte, proves to be exactly the same as *leucoscelis* and does not approach *gilensis* in the characters described above.

***Chlænienus sanantonialis*** n. sp.—Somewhat similar to *cordicollis* but smaller and more abbreviated, dark steel-blue in color throughout above, the under surface black; legs and antennæ testaceous; head and antennæ nearly as in *cordicollis*, the prothorax also similar but much shorter, distinctly wider than long; elytra shorter and rather broader, with similarly rounded humeral edge and widest slightly behind the middle, the striæ coarser, more impressed and with coarser and more conspicuous punctures; intervals not so broad, feebly convex and with the fine punctures less close-set; under surface and sexual characters nearly similar. Length ( $\sigma^7$ ) 13.5–14.0 mm.; width 5.2–5.7 mm. Texas. Two male examples, without more accurate indication of locality.

Distinguishable from *cordicollis* by its more abbreviated form, shorter and relatively broader elytra, with much coarser, more impressed and more coarsely punctate striæ and convex, less punctate intervals.

***Chlænienus sierricola*** n. sp.—Moderately elongate, rather depressed on the upper surface, shining and dark blue above, the elytra rather more obscure and opaculate; under surface black and shining, the legs and antennæ pale testaceous; head not longer than wide, smooth centrally, rugulose and punctate toward the eyes and basally; antennæ and palpi rather long and slender; prothorax two-fifths wider than the head and a third wider than long, the sides broadly rounded, slightly converging and distinctly sinuate basally, the base slightly wider than the apex; surface strongly, rather closely punctate, less closely and rather more irregularly so before about the middle; elytra three-fourths wider than the prothorax, rather more than one-half longer than wide, parallel and broadly arcuate at the sides, the basal and lateral beading forming a sharp angle; striæ very fine, feebly impressed, minutely punctulate, the intervals nearly flat, rather closely punctate, the punctures much larger

than those of the striæ though fine; pubescence fulvous; under surface punctured throughout, strongly and rather closely on the sterna; anterior tarsi (♂) with three dilated joints. Length (♂) 13.5 mm.; width 5.7 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

There is no species very closely allied to the above, but it may be placed near *æstivus* for the present; the stria punctures are very minute and become apparent only under careful observation.

**Chlænium cumatilis** ssp. *sparsellus* nov.—Similar to *cumatilis* in general habitus but stouter and with larger prothorax, deep indigo-blue and opaculate throughout above; head as in *cumatilis* but with the antennæ slightly more elongate; prothorax much larger, a fourth wider than long, the sides more broadly and feebly rounded, similar basally and on the disk, except that the sparse punctures are much less coarse; elytra similar but broader, with the fine striæ less impressed and the fine punctures scattered over the intervals about twice as numerous; tarsi more elongate; under surface nearly similar, except that the punctures are more numerous, especially on the prothorax throughout. Length (♀) 15.0–16.0 mm.; width 6.2–6.7 mm. Arizona.

Distinguishable from *cumatilis*, from the coast regions near San Diego, by its rather larger size, stouter form, larger prothorax, which is less rounded at the sides and by the more numerous punctures.

**Chlænium texanellus** n. sp.—Body rather small in size and moderately convex, rather shining and pure indigo-blue anteriorly, the elytra more obscure, blackish-blue and opaque; pubescence very short, fine, obscure fulvous; head moderate, smooth and with rather large and very convex eyes; antennæ moderate, fuscate, the three basal joints paler; prothorax in outline and sculpture nearly as in *brevilabris*, the punctures rather less close-set; elytra oblong, barely one-half longer than wide, nearly one-half wider than the prothorax, the striæ fine, rather strongly punctate, the punctures perforate and much wider than the striæ; intervals flat, very finely, rather closely punctate, the punctures feeble and shining in the opaque ground; basal and marginal beads joining in a broadly rounded angle; under surface black, shining, distinctly and rather closely punctured throughout, the legs testaceous. Length (♂ ♀) 9.8–11.0 mm.; width 4.3–4.9 mm. Texas (Galveston).

This species is allied to *brevilabris* but is shorter and is always of a pure deep blue color; the elytral striæ are finer and the fine punctures of the intervals are much less asperulate. In a series of eleven specimens of *brevilabris* at hand, the pronotum is always bright green to coppery, while in a series of nineteen examples of *texanellus*, the pronotum is deep bright violet-blue, except in one where the blue is mixed with blue-green. The general outline is

shorter and relatively broader than in *brevilabris* and the head is smaller, with more conspicuous eyes.

**Chlænien zunianus** n. sp.—General habitus and structure as in *tomentosus* Say, but more elongate and parallel, deep black above, beneath and throughout the legs and palpi, the antennæ black, with the basal joint partially pale; pubescence short, much less close than in *tomentosus* and rather darker fulvous in color; head smoother, with only a few very minute punctures laterally and no rugæ; there is an isolated cluster of three or four coarser punctures about the setigerous fovea near each eye; prothorax in form and sculpture throughout almost as in *tomentosus*, except that the punctures are everywhere coarser in corresponding positions; elytra differing decidedly, oblong, parallel, more elongate, more rapidly obtuse at apex, a fifth wider than the prothorax, the striae, stria punctures and humeral angle of the beading similar, the intervals about one-half as densely and less asperately punctate; under surface as in *tomentosus* throughout; prosternum margined. Length (♀) 14.0 mm.; width 5.9 mm. New Mexico (Fort Wingate),—John Woodgate.

Differs from *tomentosus* in its deep black color, more elongate and abruptly obtuse, much less densely punctate elytra, rather more transverse and somewhat less anteriorly narrowed and more coarsely sculptured pronotum and smoother head. From *insperatus* Horn, it differs in having the lateral and basal beads form a sharp angle at the humeri and in its dark fulvous and not black vestiture.

**Chlænien pimalicus** n. sp.—Body somewhat as in *chrysopleurus* Chd., but narrower and with uniform elytral coloration and flatter intervals, shining and vivid metallic green throughout the head and pronotum, except the convex lateral part of the latter basally, which is cupreous; elytra opaculate, bright green throughout, the smoother marginal interval rather brighter green; under surface, legs and tarsi black; vestiture short but stiff, fulvous; head smooth, with the frontal foveæ prolonged to a point opposite the middle of the eyes, where there is an additional short groove more inwardly; antennæ short, stout, piceous; prothorax in form and sculpture almost exactly as in *chrysopleurus* throughout; elytra differing greatly, being narrower, with much less convex, more opaque, more closely and much less strongly punctate intervals, the punctures of the much shallower striae similarly very small; under surface nearly smooth but with more coarse sternal punctures than in *chrysopleurus*. Length (♀) 13.5–14.0 mm.; width 5.6–5.8 mm. Southern Arizona. Three examples from the Levette collection.

The differences as shown between this species and three examples of *chrysopleurus* from Guatemala and Honduras, which I have before me, are expressed above, but *pimalicus* is very much closer to *forreri* Bates, from Ventanas, Mexico, and may prove to be merely a subspecies of the latter. In *forreri* the elytra are described

and figured as virtually black, with the marginal interval bright green and not of a uniform vivid green throughout as in *pimalicus*; the tarsi, also, are said to be piceo-rufous.

### **Anomoglossus Chd.**

This genus is well defined and differs from *Chlœnius* in the absence of a tooth in the emargination of the mentum, more uniformly punctate abdomen and generally much more deeply emarginate labrum. The species are more numerous than hitherto supposed and six are now known; they seem to be confined to the nearctic faunal regions and are as follows:

Last joint of the maxillary palpi glabrous; body larger in size; labrum deeply emarginate.....2

Last joint with sparse stiff hairs; body of small size.....4

2—Punctures of the elytral striæ extremely minute, confined to the fine striæ. Body narrower and less ventricose, shining, metallic green, the elytra opaque and deep blackish-blue; under surface black and shining, the legs pale-testaceous; vestiture short, stiff, fulvous; head smooth, the occiput transversely sparsely punctate; frontal foveæ small, feeble and indefinite; antennæ slender, testaceous; prothorax but little wider than long, much wider than the head, convex, the sides very evenly and moderately arcuate from apex to the basal angles, which are slightly obtuse and blunt but distinct; apex almost truncate and but very little narrower than the base, which is broadly sinuate medially as usual; surface strongly and somewhat loosely punctate, gradually densely toward base and near the median line, which is strongly impressed; foveæ elongate and very deep, slightly oblique; elytra nearly three-fourths longer than wide, about a fourth wider than the prothorax, parallel and broadly arcuate at the sides, obtusely rounded at tip; striæ very fine; interspaces flat, finely, closely punctate, the punctures evidently stronger than those of the striæ; sterna throughout with very coarse and more or less close-set punctures, the abdomen finely, sparsely punctate. Length (♀) 11.5 mm.; width 4.35 mm. New York (central). **delectans** n. sp.

Punctures of the elytral striæ strong and coarser, rather wider than the striæ basally.....3

3—Body of rather large size, stout, elongate-oval, cupreous and moderately shining anteriorly, the elytra very dull and blackish-blue, with moderately long and rather fine, dull fulvous vestiture; under surface and legs throughout as in the preceding; head three-fifths as wide as the prothorax, rather rugulose, the occiput transversely and strongly punctate; mandibles rather elongate; frontal foveæ very small; antennæ long and very slender, testaceous; prothorax very nearly as long as wide, the sides broadly rounded, gradually converging anteriorly from the point of greatest width, which is well



behind the middle; apex nearly truncate, much narrower than the base, which is transverse, becoming anteriorly oblique laterally, the angles distinctly rounded; side margins more reflexed basally; surface nearly as in the preceding, except that the strong median stria is not at all impressed but sharply incised; elytra oval, with parallel arcuate sides, three-fifths longer than wide, nearly one-half wider than the prothorax; striæ deep; intervals not quite flat, finely and very closely punctate, the punctures very much smaller than those of the striæ; first three joints of the anterior tarsi (♂) dilated and very gradually diminishing in width. Length (♂) 15.0 mm.; width 6.25 mm. Mississippi (Vicksburg).....**gravis** n. sp.

Body somewhat as in the preceding in general habitus but smaller and much narrower in build, the anterior parts more brilliantly cupreous, generally greenish toward the sides, the elytra less opaque and of a clearer indigo-blue; head smaller but otherwise nearly similar, smoother, the rugæ of the preceding not visible; prothorax nearly similar, except that the sides are more evenly, feebly arcuate from near the base to the apex and the side margins are not or only very slightly more reflexed basally; surface otherwise similar; elytra nearly similar but much narrower, with finer and more deeply impressed, still more strongly and closely punctate striæ and more convex intervals, having the similarly close-set punctures a little stronger; under surface and tarsi nearly as in the two preceding. Length (♂ ♀) 11.0–14.0 mm.; width 4.4–5.35 mm. Rhode Island to Florida and westward to Tennessee and Indiana. Very common.

**emarginatus** Say

4—Labrum feebly emarginate; prothorax with basal and apical widths almost equal. Body moderately small in size, the sides of the prothorax very feebly sinuate posteriorly, the hind angles slightly rounded; reflexed margin feebly elevated basally, the surface as long as wide, nearly flat, densely punctate, with well marked median line and deep elongate foveæ; elytra oval, wider than the prothorax, with strongly marked and distinctly punctate striæ and flat, finely and closely punctured intervals. Length 8–9.5 mm.; width 3.3–4.0 mm.—Description quoted from Dejean. Georgia. .**amœnus** Dej.

Labrum deeply emarginate; prothorax generally more narrowed basally. .5  
5—Form moderately slender, not very convex, shining, metallic bluish-green anteriorly, the elytra feebly shining and obscure deep blue; under surface black, closely punctate throughout as in all the preceding species, the legs testaceous; head more than two-thirds as wide as the prothorax, smooth centrally, punctured sparsely toward the eyes and across the occiput, the eyes only moderately prominent; antennæ slender, testaceous, clearer basally; prothorax slightly shorter than wide, the sides evenly and moderately rounded to basal sixth or seventh, there sinuate and thence straight and parallel to the basal angles, which are right and sharply defined, the reflexed margin very fine and even throughout; apex feebly sinuate, a little wider than the base, which is transverse and rectilinear; surface broadly, evenly convex, moderately coarsely, deeply, rather sparsely and somewhat unevenly punctured throughout; median

line fine, not entire; foveæ sublinear, moderate in size and depth, continued to the hind angles by a gradually feebly deplanate area; elytra one-half longer than wide and nearly one-half wider than the prothorax, parallel, with broadly arcuate sides and circularly rounded apex; striæ fine, feebly impressed, very minutely punctate, except basally, where the punctures become rather strong and twice as wide as the striæ; intervals very feebly convex, rather finely but strongly, closely punctate and with short fulvous pubescence; femora rather distinctly though sparsely and unevenly punctate. Length (♂ ♀) 8.0–8.8 mm.; width 2.8–3.2 mm. New York to Iowa. [*Chlænium elegantulus* Dej.; *feisthameli* Laf.]..... **pusillus** Say

Form more abbreviated, the size much smaller; coloration, lustre and general habitus nearly similar; head relatively larger, nearly four-fifths as wide as the prothorax, similarly punctured; antennæ slender, not much over half as long as the body, testaceous, clearer basally; prothorax nearly similar in form and sculpture but more nearly as long as wide, the sides at base becoming straight only at, and not for some distance before, the basal angles, which are distinctly obtuse though sharply marked and not blunt; base becoming arcuately oblique at the sides, barely visibly wider than the subtruncate apex; surface not differing markedly, the foveæ a little smaller; elytra shorter, two-fifths longer than wide and two-thirds wider than the prothorax, parallel, with broadly arcuate sides, the apex much more rapidly and obtusely rounded; striæ still finer and less impressed, similarly but not quite so strongly punctate, the intervals similar but not so closely punctured or pubescent; abdomen with the fine punctures less uniformly distributed; femora less punctate; sterna similarly coarsely and deeply punctured throughout. Length (♀) 6.3 mm.; width 2.4 mm. Louisiana (Alexandria). **nanulus** n. sp.

These species seem to be amply distinct among themselves and doubtless a number of others are already included in collections. The subacute lobes of the labrum, in all the species, have a loose tuft of stiff yellow bristles, which are different from the ordinary setæ of the labral apex.

### **Brachylobus** Chd.

The mentum in this genus is so radically different from the usual type in this subfamily, that a separate tribe might be organized to include it alone, so far as now known. The surface of the mentum is smooth and has two very deep impressed perforations; the apex has an extremely shallow sinus, with very short angulate lateral lobes and is completely edentate. The following is a subspecies of the well known *lithophilus*:

**Brachylobus lithophilus** ssp. **indigaceus** nov.—Body nearly as in *lithophilus* in form, size and sculpture, but not quite so stout and not

green but dark violet-blue throughout above, more obscure on the elytra; head rather smaller and with somewhat less prominent eyes; prothorax similar throughout but not quite so short or transverse; elytra similar but slightly less obtusely rounded at tip and with the striæ sensibly finer and much less strongly punctate, the intervals flat, not quite so densely punctate; punctures of the under surface scarcely so large but similarly disposed. Length ( $\sigma^7$  ♀) 8.5-9.0 mm.; width 3.7-4.0 mm. Texas. Two examples.

My series of *lithophilus* is from New Jersey, Pennsylvania and Indiana; *indigaceus* is a more southern development of the stem form. *Caurinus* Horn, differs in the form of the prothorax.

#### Subfamily MICRATOPINI nov.

Middle coxal cavities entirely inclosed by the sterna, the suture very fine and close. Head with a single supra-orbital seta. Mesosternal epimera very narrow, indistinct; elytra covering the abdomen. Mandibles without an external seta. Posterior coxæ contiguous. Elytral margin continuous, without an internal plica. Last joint of the palpi minute, slender, oblique and inserted within a cavity at the tip of the penultimate. Body minute; integuments thin; facies nearly as in the Lebiinæ.

Following the order of characters now usually admitted in the classification of the Carabidæ, the very small species serving as the type of the new subfamily here proposed, is, as may be surmised, extremely isolated, for, with palpi nearly as in the Bembidiinæ and habitus of the body nearly as in the Lebiinæ, we have standing out very clearly at the smooth sides of the head, near the eye, only a single long seta, exactly as in all the other CARABIDÆ CONJUNCTÆ UNISetosæ.\*

#### *Micratopus* n. gen.

Body very small and feebly convex, oblong-elongate, with thin integuments, rather small short head and large convex eyes. Mouth organs rather crowded. Mentum moderate, nearly flat, oval, slightly transverse, with a moderate and rather deep edentate sinus, the lobes sharply acuminate. Ligula very small, slender, the paraglossæ small, externally pointed at apex. Basal joint of the outer maxillary lobe stout, oval, the last joint short, narrower,

\* In contradistinction to the first division of the Carabidæ, which may be known as CARABIDÆ DISJUNCTÆ.

affixed obliquely and gradually acuminate from base to apex. Labial palpi with the first joint minute, the second large, inflated, pubescent, the third joint minute, slender, projecting obliquely from the apex of the second. Maxillary palpi moderately long, coarsely pubescent throughout, the second joint moderately slender, the third of equal length, moderately stout, gradually narrowed basally, the fourth minute, aciculate, oblique, extending from a cavity in the tip of the third. Mandibles small, strongly arcuate, almost entirely hidden under the labrum in repose, bifid at tip. Labrum transverse, strongly convex, smooth, deeply sinuate medially. Epistoma flat, slightly wider than long, arcuate at tip, the suture fine, the frontal foveæ obsolete, represented by large and feeble impressions. Eyes notably large though only moderately prominent, the facets very distinct and convex. Antennæ long, very slender, filiform, pubescent throughout, the first joint subequal to the fourth and longer than either the second or third, which are nearly equal. Prothorax transversely and feebly obtrapezoidal, with a marginal seta before the middle and another at the hind angles. Scutellum ogival, entering well between the elytra, which are feebly striate, with obtuse apex, rounded sutural angles and a small subapical discal puncture at the third stria, the scutellar stria completely wanting but with the fovea very exceptional, being in the form of a small setigerous tubercle arising from the bottom of a rounded depression; sides with about four granuliferous setigerous foveæ basally and two or three apically, the latter bearing very long setæ. Prosternum unusually long before the coxæ, the process unmarginated. Abdomen uniformly punctulate and minutely setigerous throughout, with a close-set pair of apical setæ at each side, apparently in both sexes. Sexual characters not apparent. Legs moderate, the femora strongly compressed, the tibiæ simple, with small slender spurs, the tarsi rather long, very slender throughout, the first joint of the posterior subequal in length to the entire remainder, the fifth a little longer than the two preceding combined; claws very small and slender.

**Micratopus fusciceps** n. sp.—Body very small in size, subparallel, moderately convex, shining, pale piceous-brown in color, rather paler beneath; the legs, antennæ and oral organs pale yellow-testaceous, the head not very deep black; integuments glabrous, excepting the abdomen; head three-fifths as wide as the prothorax, short, wider than long, smooth,

alutaceous and micro-reticulate; antennæ very slender and filiform, nearly three-fifths as long as the body; prothorax one-half wider than long, widest near apical third, where the sides are rather strongly rounded, thence moderately converging and more feebly arcuate to the basal angles, which are obtuse but distinct and subprominent; apex broadly sinuate, barely as wide as the base; surface smooth and polished, with strong abbreviated median stria and, at the basal margin near each side, a small feeble fovea; elytra nearly one-half longer than wide, parallel, with nearly straight sides and abruptly very obtuse apex, a third to nearly half wider than the prothorax, the striae rather broadly impressed and not at all sharply defined; humeri right and narrowly rounded. Length 1.6-1.8 mm.; width 0.65-0.75 mm. Mississippi (Vicksburg).

A series of eight specimens were all that I could find among debris of fallen leaves in one of the narrow ravines south of the town.